Product Bulletin for 160GB Drive Replacement with 240GB Drives on CDE250 Streamer

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# Background

The existing 160GB drives present in CDE250 streamer have been EOL'ed. Now, customer can use new Intel 240GB drives (Intel S4600 240GB, SATA 6Gb/s, 3D, TLC 2.5" 3DWPD FW121) as a replacement for 160GB drives on a CDE250 streamer.

**Note:** These 240GB drives will work well in the same chassis with the existing 160GB drives.

# Replacing the Drives

The following steps can be used to swap/replace the 160GB drives with 240GB drives:

## Steps to replace the drives

1. Login to the VDS server.
2. Identify the drives/slots to be replaced.
3. Use the following command to remove the existing drives (which needs to be replaced) safely:

*“****echo csd [drive number] > /proc/cds/cdd/remove\_device”***

*Example:*

*#* ***echo csd24 > /proc/cds/cdd/remove\_device***

*2018 Apr 6 11:53:30 VHO1-SD-Str5 [1525.788520] Disk driver reported user requested device 24 be removed*

*[root@VHO1-SD-Str5 ~]# 2018 Apr 6 11:53:31 VHO1-SD-Str5 [1525.864921] Disk device 24 has been removed from the file system*

*2018 Apr 6 11:53:31 VHO1-SD-Str5 [ 1525.937184] System is running with 23 drives*

**Note:** The above command will work only when the drive is in working condition.

1. Physically remove those drives from the slots.
2. Insert the new drives (240GB) to those slots.
3. Disable the services:

*#* ***vdsServices disable***

1. Stop the avsdb service:

*#* ***service avsdb stop***

1. Reboot the server:

*#* ***reboot***

1. Login to the server once it comes up.
2. Start avsdb:

*#* ***service avsdb start***

1. Start Cserver with “clear dir” (-C) option:

# ***/arroyo/test/run -C***

1. Type “cleardir” :

*Type cleardir to continue or any other key to exit:* ***cleardir***

1. Start all other services:

# ***vdsServices start***

1. Enable vdsServices:

***#vdsServices enable***

1. Use the below command to check the drive status:

 ***#cat /proc/calypso/status/diskinfo***

 *Example:*

*[root@VHO1-SD-Str6 ~]#* ***cat /proc/calypso/status/diskinfo***

*Disk Info:*

 *Disk | Storage Stats (bytes) | Bandwidth Stats (bps)*

 *Id | Used Total | Write Read*

 *1 | 0.1% 251,939,328 128,033,507,840 | 0.0% 0 0*

 *2 | 0.1% 249,842,176 128,033,507,840 | 0.0% 0 0*

 *3 | 0.1% 249,842,176 128,033,507,840 | 0.0% 0 0*

 *4 | 0.1% 254,036,480 128,033,507,840 | 0.0% 0 0*

 *5 | 0.1% 249,842,176 128,033,507,840 | 0.0% 0 0*

 *6 | 0.1% 249,842,176 128,033,507,840 | 0.0% 0 0*

 *7 | 0.0% 157,113,856 160,041,885,184 | 0.0% 0 0*

 *8 | 0.0% 157,113,856 160,041,885,184 | 0.0% 0 0*

 *9 | 0.0% 159,211,008 160,041,885,184 | 0.0% 0 0*

 *10 | 0.1% 161,308,160 160,041,885,184 | 0.0% 0 0*

 *11 | 0.1% 161,308,160 160,041,885,184 | 0.0% 0 0*

 *12 | 0.0% 159,211,008 160,041,885,184 | 0.0% 0 0*

 *13 | 0.0% 157,113,856 160,041,885,184 | 0.0% 0 0*

 *14 | 0.0% 157,113,856 160,041,885,184 | 0.0% 0 0*

 *15 | 0.0% 159,211,008 160,041,885,184 | 0.0% 0 0*

 *16 | 0.1% 161,308,160 160,041,885,184 | 0.0% 0 0*

 ***17 | 0.0% 235,494,912 240,057,409,024 | 0.0% 0 0***

 ***18 | 0.0% 235,494,912 240,057,409,024 | 0.0% 0 0***

 ***19 | 0.0% 233,397,760 240,057,409,024 | 0.0% 0 0***

 ***20 | 0.0% 233,397,760 240,057,409,024 | 0.0% 0 0***

 ***21 | 0.0% 233,397,760 240,057,409,024 | 0.0% 0 0***

 ***22 | 0.0% 233,397,760 240,057,409,024 | 0.0% 0 0***

 ***23 | 0.0% 233,397,760 240,057,409,024 | 0.0% 0 0***

 ***24 | 0.0% 233,397,760 240,057,409,024 | 0.0% 0 0***

*Total | 0.1% 4,966,733,824 4,289,079,171,072 | 0.0% 0 0*

 *Adj | 0.15%*

*Disks Operational 24 Configured 24*

*Reserved for directory 33,554,432B, Being freed 0B*

*[root@VHO1-SD-Str6 ~]#*

***Important Note/Information when the VDSTV streamer has mixed storage drives:***

In case of disks with mixed storage capacity(for example 16\*160GB drives + 8\*240GB drives), Cserver will not fill the 240GB drives to its maximum capacity, and it can fill only up to 66% , i.e. till 160GB drives reaches to 99%.

To see logs when 160GB drives reached to 99%:

*[root]# cat /proc/calypso/status/diskinfo*

*Disk Info:*

*Disk |             Storage Stats (bytes)              | Bandwidth Stats (bps)*

*Id |                       Used               Total |        Write  Read*

*1 |  98.9%     158,435,466,752     160,041,885,184 |   5.2%  109M     0*

*2 |  98.9%     158,355,774,976     160,041,885,184 |   4.6% 93.9M     0*

*3 |  99.0%     158,500,478,464     160,041,885,184 |   6.0%  122M     0*

*4 |  99.0%     158,500,478,464     160,041,885,184 |   4.9%  102M     0*

*5 |  99.0%     158,460,632,576     160,041,885,184 |   2.8% 60.4M     0*

*6 |  98.9%     158,401,912,320     160,041,885,184 |   4.3% 92.3M     0*

*7 |  98.9%     158,424,980,992     160,041,885,184 |   3.3% 70.4M     0*

*8 |  98.9%     158,328,512,000     160,041,885,184 |   4.5% 92.3M     0*

*9 |  98.9%     158,429,175,296     160,041,885,184 |   5.2%  107M     0*

*10 |  99.0%     158,487,895,552     160,041,885,184 |   4.4% 90.6M     0*

*11 |  98.9%     158,395,620,864     160,041,885,184 |   4.2% 85.5M     0*

*12 |  99.0%     158,529,838,592     160,041,885,184 |   5.7%  117M     0*

*13 |  98.9%     158,292,860,416     160,041,885,184 |   4.2% 87.2M     0*

*14 |  99.0%     158,441,758,208     160,041,885,184 |   5.1%  104M     0*

*15 |  98.9%     158,380,940,800     160,041,885,184 |   4.9%  102M     0*

*16 |  98.8%     158,211,071,488     160,041,885,184 |   4.0% 83.9M     0*

*17 |  66.0%     158,448,836,096     240,057,409,024 |   2.6%  100M     0*

*18 |  66.0%     158,513,847,808     240,057,409,024 |   2.1% 80.5M     0*

*19 |  66.0%     158,499,167,744     240,057,409,024 |   2.8%  109M     0*

*20 |  66.0%     158,490,779,136     240,057,409,024 |   2.2% 85.5M     0*

*21 |  66.0%     158,474,001,920     240,057,409,024 |   2.8%  107M     0*

*22 |  66.0%     158,507,556,352     240,057,409,024 |   2.5% 95.6M     0*

*23 |  66.0%     158,604,025,344     240,057,409,024 |   3.5%  132M     0*

*24 |  66.0%     158,503,362,048     240,057,409,024 |   2.4% 92.3M     0*

*Total |  84.8%   3,802,618,974,208   4,481,129,435,136 |   3.9% 2.32G     0*

*Adj |  99.01%*

*Disks Operational 24 Configured 24*

*Reserved for directory 159,383,552B, Being freed 16,617,832,448B*

**Background on the above behavior:**

To determine how to maintain the minimum free space (1% for streamer), Cserver uses the number of active drives up to a maximum of half the number of configured drives.

In this case, 160GB drives are 16 (half+ of total drives , i.e. 12+) and 240GB drives are only 8, so Cserver chooses 160GB drives storage space to determine the minimum free space to be maintained. So we are seeing this behavior when 160GB drives are reached to 99%. And it would be other way if 240GB drives are 12+.

# Recommendations

Customer can either replace the faulty 160GB drives with the new 240GB drives, or all the 24 drives slots can be replaced with 240GB drives.

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